

REMARKS

This is a full and timely response to the final Official Action mailed September 9, 2004. Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested. Claims 1-14 and 16-44 are currently pending for further action.

As an initial matter, Applicant traverses the finality of the Office Action of September 9, 2004. According to that Action, "Applicant's amendment necessitated the new ground(s) of rejection presented in this Office Action." (Action of 9/9/04, p. 12). This is obviously incorrect. Applicant's previous response, filed July 30, 2004, *made no amendments to the application*. The new grounds of rejection were needed because the Office was erroneously applying the Trubko reference which was not, in fact, valid prior art against the present application. (Action of 9/9/04, p. 2, paragraph 1). Thus, it cannot be said that Applicant's amendment necessitated the new grounds of rejection, and the present Office Action should not be a final Action. Therefore, Applicant respectfully requests that the finality of the Office Action of September 9, 2004 be withdrawn on the record.

With regard to the prior art, the final Office Action rejects claims 1-6 and 14-23 as anticipated under 35 U.S.C. § 102(e) by U.S. Patent No. 6,118,474 to Nayar ("Nayar"). For at least the following reasons, this rejection is respectfully traversed.

Claim 1 recites:

A method for generating a selectable perspective view of a portion of a hemispherical image scene, comprising the steps of:
acquiring an omnidirectional image on an image plane using a reflective mirror that satisfies a single viewpoint constraint and an image sensor;

defining a perspective viewing window based on configuration parameters;
and
mapping each pixel in the perspective window with a corresponding pixel value in the omnidirectional image on the image plane using a look-up table based on the configuration parameters.
(emphasis added).

In contrast, Nayar fails to teach or suggest the claimed mapping of pixels from an omnidirectional image to a perspective viewing window “using a look-up table.” Support for the amendment to claim 1 can be found in Applicant’s specification as originally filed at, for example, paragraph 0040.

"A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. As demonstrated, Nayar fails to teach or suggest all the features of amended claim 1. Therefore, the rejection of claims 1-13 based on Nayar of should be reconsidered and withdrawn.

Claim 14, as amended herein, recites:

An improved imaging apparatus for generating a two-dimensional image, comprising:
a reflective mirror configured to satisfy an optical single viewpoint constraint for reflecting an image scene;
an image sensor responsive to said reflective mirror and that generates two dimensional image data signals to obtain an omnidirectional image on an image plane;
and
a controller coupled to the image sensor, wherein the controller defines a perspective viewing window based on configuration parameters and maps pixels from said omnidirectional image into said perspective viewing window; and
a memory for storing a mapping matrix for each of a plurality of sets of said configuration parameters in a parameter space, said controller using a said mapping matrix to perform mapping of pixels from said omnidirectional image into said perspective viewing window.
(emphasis added).

In contrast, Nayar fails to teach or suggest the claimed memory storing a mapping matrix for each of a plurality of sets of configuration parameters that define a perspective viewing window. Support for the amendment to claim 1 can be found in Applicant's specification as originally filed at, for example, paragraphs 0040-0042.

"A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. As demonstrated, Nayar fails to teach or suggest all the features of amended claim 14. Therefore, the rejection of claims 14, 16-30, 34 and 35 based on Nayar of should be reconsidered and withdrawn.

Claims 31-38 and 44 were rejected as unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Nayar and U.S. Patent No., 6,226,035 to Korein et al. ("Korein").

Similar to claim 14, claim 31 recites:

An imaging apparatus for generating a two-dimensional image, comprising:
a reflective hyperbolic mirror having a hyperbolic cross-section;
an image sensor optically coupled to said reflective mirror that generates two-dimensional image data signals based on an omnidirectional image reflected by said mirror; and
a controller coupled to the image sensor, wherein the controller defines a perspective viewing window based on configuration parameters and maps pixels from said omnidirectional image into said perspective viewing window; and
a memory for storing a mapping matrix for each of a plurality of sets of said configuration parameters in a parameter space, said controller using a said mapping matrix to perform mapping of pixels from said omnidirectional image into said perspective viewing window.

In contrast, the combination of Nayar and Korein fails to teach or suggest the claimed memory storing a mapping matrix for each of a plurality of sets of configuration parameters

that define a perspective viewing window. Support for the amendment to claim 31 can be found in Applicant's specification as originally filed at, for example, paragraphs 0040-0042.

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." M.P.E.P. § 2143.03. Accord. M.P.E.P. § 706.02(j). As demonstrated, Nayar and Korien fail to teach or suggest all the features of amended claim 31. Therefore, the rejection of claims 31-33 and 36-44 based on the teachings of Nayar and Korein should be reconsidered and withdrawn.

Dependent claims 7-9, 24 and 25 were rejected under 35 U.S.C. § 103(a) over the combined teachings of Nayar and U.S. Patent No. 5,790,181 to Chahl et al ("Chahl"). This rejection is respectfully traversed for at least the same reasons given above with respect to the inapplicability of Nayar's teachings to the recitations of independent claims 1 and 14.

Dependent claims 10-13 and 26-29 were rejected under 35 U.S.C. § 103(a) over the combined teachings of Nayar and U.S. Patent No. 5,686,975 to Baker ("Baker"). This rejection is respectfully traversed for at least the same reasons given above with respect to the inapplicability of Nayar's teachings to the recitations of independent claims 1 and 14.

Dependent claim 30 was rejected as unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Nayar and Korein. This rejection is respectfully traversed for at least the same reasons given above with respect to the inapplicability of Nayar's teachings to the recitations of independent claim 14.

Dependent claim 39 and 40 were rejected as unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Nayar, Korein, Chahl and U.S. Patent No. 3,988,533 to Mick et al. This rejection is respectfully traversed for at least the same reasons given above with respect to the inapplicability of Nayar's teachings to the recitations of independent claim 31.


Dependent claim 41-43 were rejected as unpatentable under 35 U.S.C. § 103(a) over the combined teachings of Nayar, Korein, and Baker. This rejection is respectfully traversed for at least the same reasons given above with respect to the inapplicability of Nayar's teachings to the recitations of independent claim 31.

Entry of this amendment is proper under 37 U.S.C. § 1.116 because the previous Office Action was improperly made final. There being no basis on which the previous Office Action could properly have been made final, Applicant is still allowed to amend the claims as Applicant sees fit. Therefore, a withdrawal of the finality of the previous Office Action and entry of the present amendment are respectfully requested.

For the foregoing reasons, the present application is thought to be clearly in condition for allowance. Accordingly, favorable reconsideration of the application in light of these remarks is courteously solicited. If any fees are owed in connection with this paper which have not been elsewhere authorized, authorization is hereby given to charge those fees to Deposit Account 18-0013 in the name of Rader, Fishman & Grauer PLLC. If the Examiner has any comments or suggestions which could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

Respectfully submitted,

DATE: 8 November 2004


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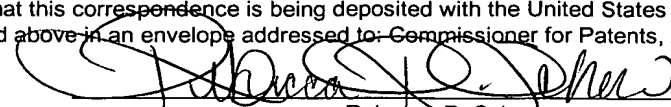
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CERTIFICATE OF MAILING

DATE OF DEPOSIT: August 20, 2004

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail on the date indicated above in an envelope addressed to: Commissioner for Patents, Alexandria, VA 22313-1450.


Rebecca R. Schow